



Marine Safety and Environmental Protection

SAFETY ALERT

MOBILE OFFSHORE DRILLING UNIT MOTOR BRAKING SYSTEMS

The Coast Guard is currently investigating the jacking system failure of an elevated MODU while the crew was conducting repairs to one of the jacking motors. The jacking system failure resulted in multiple injuries and substantial property damage. Fortunately there were no fatalities. The MODU was equipped with four independent cylindrical legs, each driven by two hydraulic motors. Preliminary findings revealed that inadequate maintenance of the braking system on the motors might have significantly contributed to the casualty. Although this investigation is not complete and acknowledging the fact that other factors likely contributed to this incident, the Eighth Coast Guard District believes it is imperative to alert the maritime public of what we have already discovered.

The brake system on the damaged motor was disabled to facilitate repair while the MODU was elevated. The manufacturer's technical manual does not address whether the MODU should be jacked up or floating; affecting this repair while the MODU is elevated is an acceptable practice within the industry. The manufacturer's replacement procedures were followed. This particular procedure had been conducted several times previously on this MODU without incident. As the brake on the damaged motor was released, the adjacent motor/brake (on the same leg, starboard side, forward) failed to hold. Indications are this brake failure was due in part to insufficient braking pad material and possible incorrect adjustment of the brake pad tensioning components. Following failure of both brake systems on the starboard side, forward leg; the starboard side, aft leg jacking system failed. The failures appeared to occur simultaneously to the crewmembers not directly involved with the repair. The failures resulted in the starboard side of the MODU "sliding" down both starboard legs, submerging part of the main deck and causing multiple injuries. It is also suspected that substandard parts had been installed in the gear train on the starboard aft leg and may have directly contributed to this event.

The importance of the jacking systems on self-elevating vessels cannot be over emphasized. Owners and operators are encouraged to review their associated maintenance schedules and procedures to ensure they meet manufacturer and industry standards.

As a reminder, the reporting requirements of 46 CFR 4.05-1(a) 4 apply to MODU's and their jacking systems. A casualty that renders the jacking system inoperable, unsafe, or requires repair should be reported to the nearest Coast Guard Marine Safety Office.

